



# CONSTRUCTION AND STANDARDIZATION OF AN ENVIRONMENTAL AWARENESS SCALE FOR THE POST GRADUATE STUDENTS

Nilakshi Senapati<sup>1</sup> | Prof. Neeta Kalita Barua<sup>2</sup>

<sup>1</sup> JRF, Department of Education, Dibrugarh University, Dibrugarh, Assam.

<sup>2</sup> Department of Education, Dibrugarh University, Dibrugarh, Assam.

## ABSTRACT

The present paper is an attempt to construct and standardized an Environmental Awareness scale for the Post Graduate students, belonging to the age-group 21 – 25 years. The final scale consisted of 12 items, distributed over 4 areas of Environmental Awareness. The reliability of the scale was found to be 0.58. To determine the validity of the Environmental Awareness scale, the investigator showed the Environmental Awareness Scale to a number of experts seeking judgment regarding the coverage of the constructs.

**KEY WORDS:** Environmental Awareness, Post Graduate students.

## INTRODUCTION

Our environment determines our lifestyle. Now there is an increasing awareness and cry all over the world for protection and preservation of the environment. However, this protection and prevention can only be possible if we have the right type of attitude and awareness towards such issues. The term environmental awareness has a broad meaning. It not only implies knowledge about environment but also values and necessary skills to solve environmental problems. Moreover, environmental awareness is the initial step ultimately leading to the ability to carry on responsible citizenship behaviour (Sengupta, Das and Maji, 2010). Hence, the researchers felt the need to develop and standardize the Environmental Awareness Scale for the Post Graduate students.

## PURPOSE OF THE SCALE

Purpose of the scale was to measure the environmental awareness of Post Graduate students. This scale is meant for Post Graduate students, belonging to the age-group 21 – 25 years.

## CONSTRUCTION AND STANDARDISATION

*Objective 1: "To construct and standardize an Environmental Awareness Scale for the PG students."*

The steps followed to construct and standardize the scale are discussed below. To fulfill the Objective no.1 the main objective was divided into the following sub objectives:

1. To prepare a draft Environmental Awareness Scale.
2. To try out the draft Environmental Awareness Scale on a sample.
3. To make item analysis of the draft Environmental Awareness scale to measure the Environmental Awareness level of P.G students.
4. To select the items for final Environmental Awareness Scale.
5. To determine the reliability of the Environmental Awareness Scale.
6. To determine the validity of the Environmental Awareness Scale.

### 1. Preparation of the draft Environmental Awareness scale:

In order to prepare the first draft of the Environmental Awareness Scale, the research literature related to construction of Environmental Awareness scale was consulted thoroughly. Different dimensions of Environmental Awareness scale were also consulted. Some scales related to Environmental Awareness were consulted and taken as a guide for the construction of the present scale. Some items have been drawn from Environmental Awareness Scales prepared and validated by Dr. K. Yeshodhara and some items from this were modified to suit the level of beneficiaries. Then the items were scrutinized, some items were restructured and some were discarded to meet the criteria of truthfulness, consistency, comprehensiveness, repetitiveness, language precision and practicability. The following scale was mainly consulted for the construction of the present scale, i.e., the Environmental Awareness Test (EAWT) constructed by Dr. K. Yeshodhara (2003).

From the study of related literature 5 dimensions of environmental awareness were found out and taken for the construction of the present Environmental Awareness Scale. The test consisted of 41 items, distributed over 5 areas of Envi-

ronmental Awareness. After review of other research studies, the dimensions identified as important for the students studying at the University level were:

- (i) Pollution
- (ii) Bio-diversity
- (iii) Energy
- (iv) Environmental concepts, concerns and legislations
- (v) Sustainable development

The total marks on this scale were fixed as 41. For a right response to each question, one mark was to be allotted. The respondent had to identify the correct answer among the alternatives given and write the corresponding alphabet in the space given on the right side of the item. The distribution of test items over different areas of Environmental Awareness in the final form of the test is detailed in Table 1.

**Table 1**  
**Distribution of Test Items in Environmental Awareness Test**

SL No	Areas of Environmental Awareness	Serial number of items in the test	Total number of items in each area
(i)	Pollution	1,2,3,4,5,6,7,8,9,10,11	11
(ii)	Bio-diversity	12,13,14,15,16,17,18,19	8
(iii)	Energy	20,21	2
(iv)	Environmental Concept, Concerns and Legislation	22,23,24,25,26,27,28,29,30,31,32,33,34	13
(v)	Sustainable development	35,36,37,38,39,40,41	7
	<b>Total</b>		<b>41</b>

### 2. Try out of the draft Environmental Awareness scale:

- **Sample:** For the purpose of the pilot study, the draft Environmental Awareness Scale was administered to 85 Post Graduate students of Dibrugarh University. The Departments for the pilot study were selected by using purposive sampling technique and all the Post Graduate students of the selected Departments were included in the sampling.
- **Instruction:** Necessary instructions were prepared and included in the beginning of the draft Environmental Awareness Scale. Oral instructions were also provided whenever necessary.
- **Scoring procedure:** For a right response to each question, one mark was to be allotted.
- **Administration of the draft study:** The procedure followed in administering the draft Environmental Awareness Scale has been described below:
  - (a) A good rapport between the investigator and the responders was established by initiating some friendly discussion.
  - (b) Proper sitting arrangement was made and the draft Environmental Awareness

ness Scale was distributed to the respondents to respond. Students were requested to read the instructions carefully. Necessary oral instructions were also provided for Awareness Scale was collected from each of the respondents.

## 2. Item Analysis:

The following steps were followed for item analysis of the draft Environmental Awareness scale.

- The responded draft Environmental Awareness scale of 85 Post Graduate students were scored by using the scoring key as mentioned earlier and then arranged in order from the highest score to the lowest score.
- Then 27% (i.e. 23 Post Graduate students) of PG students from top and 27% (i.e. 23 Post Graduate students) of PG students from the bottom were taken apart. Thus two groups, viz., high and low scoring groups were formed.
- The mean scores obtained on each individual item by high scoring group and low scoring group were computed.
- The difference between the mean scores obtained by the high scoring group and low scoring group on a particular item was found out. This difference was considered as the discriminating power of that particular item.
- To find out whether the discriminating power of a particular item is significant or not, 't' value for each item was found out.
- 't' value equal to or greater than 1.75 indicated that the average response of the high and low group to a statement differs significantly (Edwards, 1957).
- Items having 't' value > 1.75 and < 1.75 were then identified. Out of 41 items 22 items have significant 't' value ( $t > 1.75$ ). The distribution of the 22 items according to different dimensions is shown in the table-2

**Table 2**  
Item having 't'  $\geq 1.75$

Dimensions	Items	No. of Items	Total
Pollution	2,7,8,9,10,11	6	6
Bio-diversity	15,16,19	3	3
Energy	--	--	--
Environmental Concept, Concerns and Legislation	22,23,25,29,30,31,32,33,34	9	9
Sustainable development	37,38,40,41	4	4
<b>Total</b>			22

## 4. Item Selection:

The investigator decided to select 12 items from the 22 items having satisfactory 't' value for the final draft Environmental Awareness scale. To select 12 items investigator gave equal weightage to all items. The dimension of the Environmental Awareness Scale was also considered. The distributions of the selected items are shown in the table 3.

**Table 3**  
Items for the Final draft Environmental Awareness Scale

Dimensions	Items	No. of Items	Total
Pollution	2,10,11	3	3
Bio-diversity	15,16,19	3	3
Energy	-	-	-
Environmental Concept, Concerns and Legislation	22,30,32	3	3
Sustainable development	37,40,41	3	3
<b>Total</b>			12

## 4. Reliability of the Environmental Awareness Scale:

To compute the reliability of the Environmental Awareness Scale, the investigator adopted the following procedure—

- The split half technique of finding reliability was decided as appropriate by considering the nature and purpose of the scale.
- In order to compute the split-half reliability, the final form of Environmental Awareness scale was administered upon a sample of 85 Post Graduate students of Dibrugarh University.

- Odd-even method was used to split the test into two equal halves.
- The scoring of each answer sheet was done separately for these two halves of odd and even items.
- Then the coefficient of correlation between these two parts of the test was calculated using the formula of product moment co-efficient of correlation which showed the reliability of the half-test. It was found as 0.41.
- The coefficient of reliability of the whole test was then estimated by using Spearman-Brown Prophecy Formula and the reliability of the full test was found to be 0.58, which is a satisfactory one for research such as the one done in this case.

## 6. Validity of the Environmental Awareness scale:

To determine the validity of the Environmental Awareness scale, the investigator showed the Environmental Awareness Scale to a number of experts seeking judgment regarding the coverage of the constructs and after incorporating certain suggestions offered, the draft of the Scale constructed was considered to be satisfactory for the final try-out.

## REFERENCES:

- Garrett, H. E., (2014). *Statistics in Psychology and Education*. Delhi: Paragon International Publishers.
- Jinarajan, S.A.K. (1999). *A Study of Environmental Awareness and Attitude towards Environmental Education of Student Teachers of Bangalore City*. Bangalore University. Retrieved from [http://shodhganga.inflibnet.ac.in/bitstream/10603/15875/10/10\\_chapter%202.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/15875/10/10_chapter%202.pdf) on April 24th 2015, 2.30 p.m.
- Koul, Lokesh (2004). *Methodology of Educational Research*. New Delhi: Vikash Publishing House.
- Kumar, J.A. (2012). A Study on Assessment of Environmental Awareness among Teacher Trainees in Teacher Training Institutions. *IJRSS*, Vol.2, Issue.3. Retrieved from [http://www.ijmra.us/project%20doc/IJRSS\\_AUGUST2012/IJMRA-RSS1676.pdf](http://www.ijmra.us/project%20doc/IJRSS_AUGUST2012/IJMRA-RSS1676.pdf) on May 29th 2015, 11.45 a.m.
- Larijani, M. (2007). A study on Attitude and Awareness about Environment of Higher Primary School teachers in Mysore (India) and in Hameadan (Iran) - A Comparative Study, M.Phil dissertation of Mysore. Retrieved from <http://shodhganga.inflibnet.ac.in/handle/10603/15875> on June 19th 2015, 2.40 p.m.
- Sengupta, M., Das, J. and Maji, P.K. (2010). Environmental Awareness and Environment Related Behaviour of Twelfth Grade Students in Kolkata: Effects of Stream and Gender. *Anwesa*, Vol.5, 1-8. Retrieved from <http://rkmbcerahara.org/pdf/1270471914anwesa.pdf>, on May 22nd 2015, 11.00 a.m.
- Shobeiri, S.M., Omidvar, B. and Prahallada, N.N. (2007). A Comparative study of Environmental Awareness and Attitude of Teacher and Students of Secondary Schools in India and Iran. University of Mysore, India. Retrieved from [https://www.researchgate.net/publication/27794314\\_A\\_Comperative\\_Study\\_of\\_Envirionmental\\_Awareness\\_among\\_Secondary\\_School\\_Students\\_in\\_Iran\\_and\\_India](https://www.researchgate.net/publication/27794314_A_Comperative_Study_of_Envirionmental_Awareness_among_Secondary_School_Students_in_Iran_and_India) on August 7th 2015, 3.50 p.m.